



APPLICATIONS UNDER EXAMINATION

FLAX

FLAX
(*Linum usitatissimum*)

Proposed denomination: 'CDC Sanctuary'
Application number: 09-6634
Application date: 2009/04/24
Applicant: University of Saskatchewan, Saskatoon, Saskatchewan
Agent in Canada: SeCan Association, Kanata, Ontario
Breeder: Gordon Rowland, University of Saskatchewan, Saskatoon, Saskatchewan

Varieties used for comparison: 'CDC Bethune' and 'CDC Sorrel'

Summary: *The plants and stems of 'CDC Sanctuary' are taller than those of 'CDC Bethune'. 'CDC Sanctuary' flowers later than 'CDC Bethune'. The distal end of the filament of 'CDC Sanctuary' is white whereas it is blue on 'CDC Bethune'. The distal end of the style and the stigma of 'CDC Sanctuary' are blue whereas they are white on 'CDC Sorrel'.*

Description:

HYPOCOTYL: weak to medium intensity of anthocyanin colouration

FLOWER: absent or very weak sepal dotting, blue-violet colour of crown at bud stage, flattened disk shape, medium to large sized corolla, blue corolla, no longitudinal folding of the petals

STAMEN: blue anthers

FILAMENT: white at distal and basal ends

STIGMA: pale blue

STYLE: blue at distal and basal ends

BOLL: medium size, ciliation of the false septa present, indehiscent

SEED: dark brown, medium size

AGRONOMY: early to mid-season maturity, good resistance to shattering, capsule loss and lodging, low capability to produce basal branching

Origin and Breeding: 'CDC Sanctuary' was developed by the Crop Development Centre, University of Saskatchewan, Saskatoon, Saskatchewan. The cross between 'CDC Bethune' and 'FP2006' was made in the Phytotron of the College of Agriculture in 1998 and the F1 was raised in the Phytotron. 'FP2006' arose from the cross 'Flanders' / 'FP908'. The F2 population was grown at the Kernen Crop Research Farm in 1999 and advanced using the pedigree system from the F3 (2000) through F5 (2002). Selection at each generation was primarily for vigour of stand, maturity, oil concentration and iodine value. From 2003 through 2005, the line was evaluated as F03154 in replicated yield trials in Saskatchewan. It was entered into the Flax Cooperative Test in 2006 as FP2242 and tested through to 2008.

Tests and Trials: Tests and trials were conducted in 2009 and 2010 in Saskatoon, Saskatchewan. Trials consisted of 2 replications of each variety in a randomized complete block design (RCBD). There were 7 rows per replicate with a row length of 3.66 meters with 18 cm between rows (5.2 square meters). The trials were seeded on May 21 and 20 respectively. Measured characteristics were based on 20 measurements.

Comparison table for 'CDC Sanctuary'

	'CDC Sanctuary'	'CDC Bethune'*	'CDC Sorrel'*
<i>Natural plant height including branches (cm)</i>			
mean (2009)	60.65	55.30	59.95
std. deviation (2009)	4.90	3.15	3.39
mean (2010)	59.60	53.00	67.45
std. deviation (2010)	2.62	2.58	3.38

<i>Stem length</i>			
mean (2009)	36.60	30.75	35.05
std. deviation (2009)	3.35	2.65	3.43
mean (2010)	43.30	36.45	46.30
std. deviation (2010)	1.49	2.67	2.32
<i>Days to flowering</i>			
mean (2009)	59	56	59
mean (2010)	53	51	52
<i>Days to boll maturity</i>			
mean (2009)	99	100	101
mean (2010)	103	97	104
<i>Linolenic acid content (% of oil)</i>			
2009	59.5	57.1	59.6
2010	60.4	56.8	59.7

*reference varieties



Flax: 'CDC Sanctuary' (right) with reference varieties 'CDC Bethune' (left) and 'CDC Sorrel' (centre)